REMARKS / DISCUSSION OF ISSUES

Claims 1-9 and 12-18 are pending in the application. Claims 1 and 9 are the independent claims. Amendments to the claims presented in this Response are not made to overcome the applied art.

Objection to the Claims and Rejections under 35 U.S.C. § 112, ¶ 2

The objections to the claims raised in the Office Action are moot in view of the present amendments thereto.

Likewise, the rejections based on Section 112 of the Code are also moot in view of the present amendments to the rejected claims. Applicants note that the amendment to claim 9 is believed to overcome the rejection, but do not concur with the interpretation of the claim as proffered in the Office Action.

Rejections under 35 U.S.C. § 102

1. Claims 1 and 2 are rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by *Lamansky, et al.* (US PAP 20020182441) with evidence allegedly establishing inherency from *Thompson, et al.* (US PAP 20030124381).

2. Claims 1-3,6,7,9,12,13,16 and 17 are rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by *Ise, et al.* (US PAP 2002028329) with evidence allegedly establishing inherency from *Holmes, et al.* (NPL Document) and *Thompson, et al.* (US PAP 20030124381).

3. Claims 1, 3-6, 9 and 13-16 are rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by *Adachi, et al.* (US PAP 20020180347) with evidence allegedly establishing inherency from *Holmes, et al.* (NPL Document).

Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, a proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *See, e.g., In re Paulsen,* 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice. *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.,* 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.,* 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991).

I. Rejections in view of *Lamansky, et al.*

Claim 1 features:

"*...a matrix of a hole conductive organic material with one or more singlet states and one or more triplet states, selected from the group: p-conductive and n-conductive materials...*"

The Office Action directs Applicants to paragraph [0143] of *Lamansky, et al.* for the alleged disclosure of, inter alia, a matrix of conductive organic material. The Office Action selects CBP from a list provided in the paragraph, which recites:

> [0143] The host materials, TPD, CBP, and Alq_3 are fluorescent and possess small or negligible phosphorescence at room temperature due to competing thermally activated nonradiative decay processes. In addition to intramolecular pathways, these nonradiative processes include triplet diffusion to defect sites followed by dissipative transitions. Reducing the temperature slows the rate of phonon-assisted decay and triplet diffusion, and the phosphorescent PL spectra for TPD, CBP, and BCP at T=10 K are shown in FIG. 19 together with the room-temperature spectra of PtOEP and $Ir(ppy)_3$. After extended sampling, it

> was possible to obtain the room-temperature phosphorescent spectra and lifetimes for TPD and CBP. These measurements were possible because the triplet lifetimes of these materials are relatively long at room temperature: 200.+-.50 μs and >1 s, respectively. In fact, under ultraviolet excitation, weak orange CBP phosphorescence is visible to the naked eye at room temperature. In contrast, the triplet lifetime of BCP decreases rapidly as temperature increases from .about.1 s at 10 K to <10 μs at room temperature, although we note that short triplet lifetimes may be dominated by energy transfer to physical or chemical defects.

Applicants respectfully submit that a review of the captioned paragraph fails to reveal the disclosure of a matrix of a hole conductive organic material as claimed. The Examiner asserts that CBP is inherently a matrix and turns to Thompson, et al. for support for this position.

In providing the requirements of inherency, M.P.E.P. § 2112 IV provides that:

> *EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY*
>
> *The fact that a certain result or characteristic* ***may*** *occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "****To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference****, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).* (emphasis added).

Furthermore, a claim rejection must be based on objective evidence of record, and cannot be supported merely on subjective belief and unknown authority. See, e.g., M.P.E.P. § 2144.03; In re Lee, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002); In re Zerko, 258 F.3d at 1386, 59 USPQ2d at 1697.

In rejecting claim 1, the Office Action directs Applicants to paragraph [0064] of *Thompson, et al.* This portion of the reference recites:

> [0064] The material of a hole transporting layer is selected to transport holes from an anode to an emission region of the device. HTL materials mostly consist of triaryl amines in various forms which show high hole mobilities (about10^{-3} cm2/Vs). An example of a material suitable as a hole transporting layer is 4,4'-bis[N-(naphthyl)-N-phenyl-a- mino]biphenyl (α-NPD) with a hole mobility of about 5 10^{-4} cm2/V sec. Other examples include N,N'-bis(3-methylphenyl) - N,N'-diphenyl-[1,1'-biphenyl]4,4'-diamine (TPD), 4,4'-bis[N-(2-naphthyl)-N-phenyl-amino]biphenyl (.beta.-NPD), 4,4'-bis[N,N'-(3-tolyl)amino]-3,3'-dimethylbiphenyl (M14), 4,4',4"-tris(30methylphenylphenylamino)triphenylamine (MTDATA), 4,4'-bis[N,N'-(3-tolyl)amino]-3,3'-dimethylbiphenyl (HMTPD), 3,3'-Dimethyl-N^4,N^4 $N^{4'}$,$N^{4'}$-tetra-p-tolylbiphenyl-4,4- '-diamine (R854), N,N'-meta-dicarbazoloylbenzene (mCP), N,N',N"-1,3,5-tricarbazoloylbenzene (tCP) and 4,4'-N,N'-dicarbazole-biphe- nyl (CBP). Additional suitable hole transporting materials are known in the art, and examples of materials that may be suitable for the hole transporting layer can be found in U.S. Pat. No. 5,707,745, which is incorporated herein by reference.

Applicants respectfully submit that if the Examiner is relying on Thompson, et al. in an attempt to establish inherency of the matrix structure of CPB, it is not facially apparent from the captioned paragraph of *Thompson, et al.* that CBP is a matrix material.

Furthermore, the Examiner contends that "CBP disclosed as a matrix material by *Lamansky, et al.* is known to be a hole conducting material and inherently has the ability to conduct holes as evidenced by *Thompson, et al.* [0064]. While CBP in *Thompson, et al.* **may** be a hole conducting material, there is no teaching that it **must** be a hole conducting material. Thus, no such concrete evidence has been provided by the Examiner here, nor did the Examiner submit an affidavit as required by 37 C.F.R. § 1.104(d)(2) if this proposed property were based on facts within his personal knowledge

(see M.P.E.P. § 2144.03). Applicants respectfully request that such an affidavit be provided if a rejection continues to be made without a citation of any objective evidence. Thus, the test of inherency is not met.

Applicants respectfully submit that the reliance on *Thompson, et al.* is not proper. To this end, while the providing of extrinsic evidence to establish inherency is embraced, in this case, inherency is not established by the citation of *Thompson, et al.* As such, it appears that a secondary reference in a rejection for anticipation is applied. Of course, this is improper.

Thus, because at least one feature of claim 1 is not found in the applied art, a *prima facie* case of anticipation cannot be established based thereon. Therefore, claim 1 is patentable over the applied art.

I. Rejections in view of *Ise, et al.*

i. Claims 1 and 9

Claim 1 recites:

An organic electroluminescent component having a layer composite, which comprises

a) a substrate layer,

b) a first transparent electrode layer,

c) a mixing layer having

c1) ***a matrix of a hole conductive organic material with one or more singlet states and one or more triplet states,***

c2) in this matrix, a light-emitting material which comprises a metallo-organic complex compound with an emissive triplet state, and

d) a second electrode, wherein the lowest-energy triplet state of the conductive organic material is higher than the emissive triplet state of the metallo-organic complex compound by an energy difference E_t.

Claim 9, as amended, recites:

An organic electroluminescent component, comprising:

a mixing layer, comprising: a matrix of a hole conductive organic material, comprising: a light-emitting material having a metallo-organic complex compound with one or more singlet states and one or more triplet states, wherein a lowest-energy triplet state of the hole conductive organic material is higher in energy than the emissive triplet state of the metallo-organic complex compound by an energy difference E_t.

In rejecting claims 1 and 9, the Examiner relies on paragraphs [0010] and [0029] of *Ise, et al.* (See page 4 of the final rejection.)

Paragraph [0010] recites:

> In the light emitting element of the present invention, for example, the above light emitting layer is held between a pair of electrodes and an electric field is applied to the electrodes whereby electrons are injected from a cathode and holes are injected from an anode. These electrons and holes are recombined with each other in the light emitting layer to create triplet excitons. When an exciton returns to the ground state, excess energy is emitted as light in the blue region. In the above light emitting element, the above light emitting layer is composed of a light emitting material (guest material) and a host material having a minimum excitation triplet energy level (T_1) higher than the T_1 of the light emitting material. This makes it possible to transfer the energy of the above triplet exciton to the T_1 level of the light emitting material efficiently, with the result that blue light can be emitted with high luminance efficiency.

While the reference describes a light-emitting material, there is no disclosure of the matrix of a conductive organic material comprising a light-emitting material having a metallo-organic complex compound as specifically claimed. In the captioned paragraph above, the reference does describe a host material and a guest material, but does not describe a matrix as claimed. Moreover, the term 'matrix' does not appear in the

reference. Finally, the material A-10 relied on is CBP. As discussed in I. above, there is no disclosure that this is a matrix as claimed.

Thus, because at least one feature of each of claims 1 and 9 is not found in the applied art, a *prima facie* case of anticipation cannot be established based thereon. Therefore, claims 1 and 9 are patentable over the applied art.

III. Rejection in view of *Adachi, et al.*

The Office directs Applicants to paragraphs [0020] and [0038] of *Adachi, et al.* for the alleged disclosure of hole conducting matrix of a conductive organic material. A review of these paragraphs fails to reveal the disclosure of this material.

Thus, because at least one feature of each of claims 1 and 9 is not found in the applied art, a *prima facie* case of anticipation cannot be established based thereon. Therefore, claims 1 and 9 are patentable over the applied art.

Rejections under 35 U.S.C. § 103

The rejections under this section of the Code are directed to claims that depend from either claim 1 or claim 9 directly or indirectly. Since each of the dependent claims depends from a base claim that is believed to be in condition for allowance, Applicant believes that it is unnecessary at this time to argue the allowability of each of the dependent claims individually. Applicant does not, however, necessarily concur with the interpretation of any dependent claim as set forth in the Office Action, nor do Applicant concurs that the basis for the rejection of any dependent claim is proper. Therefore, Applicant reserves the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

Conclusion

In view the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies to charge payment or credit any overpayment to Deposit Account Number 50-0238 for any additional fees, including, but not limited to, the fees under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:
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/William S. Francos/

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